

Fig. 1

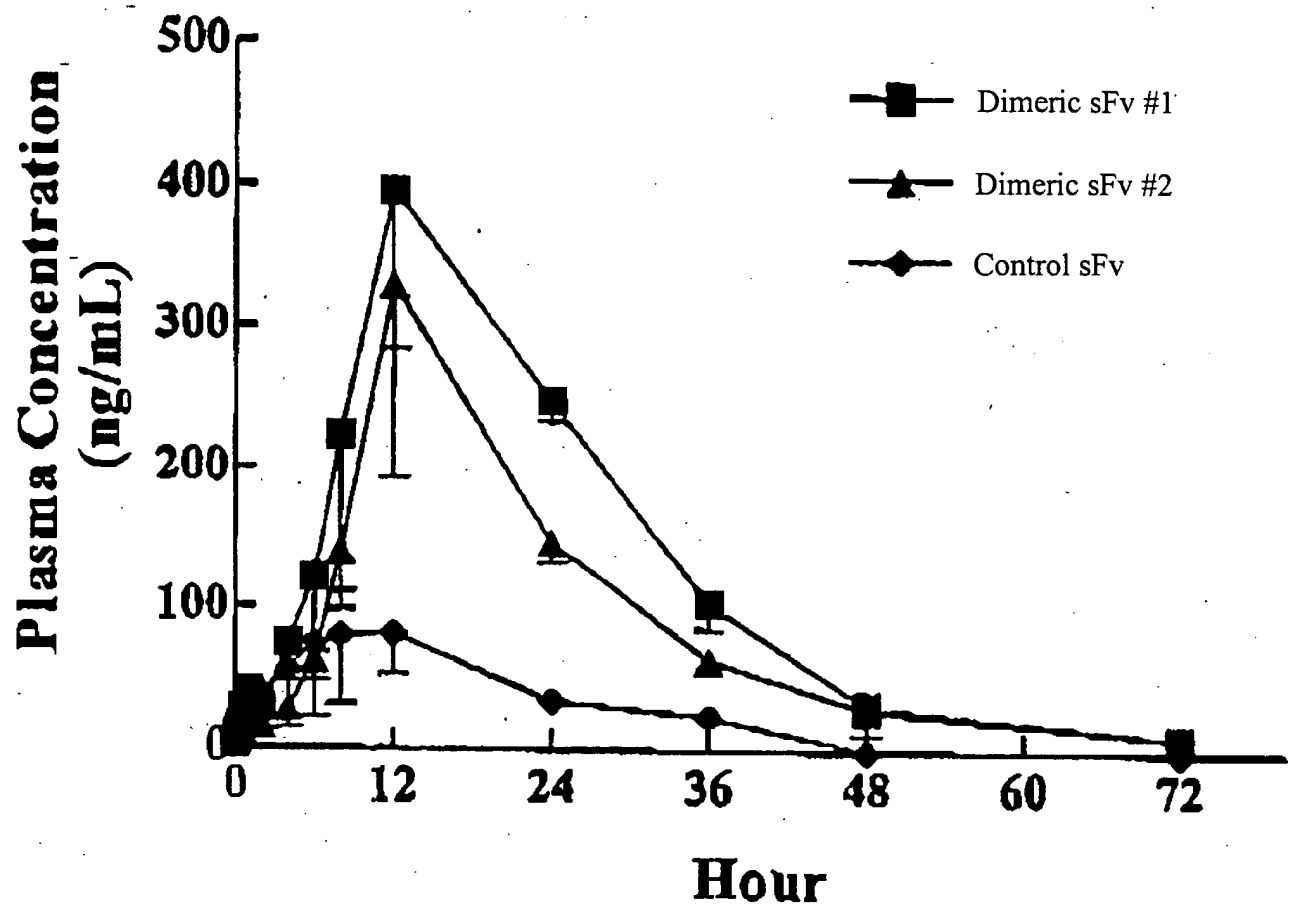


Fig. 2

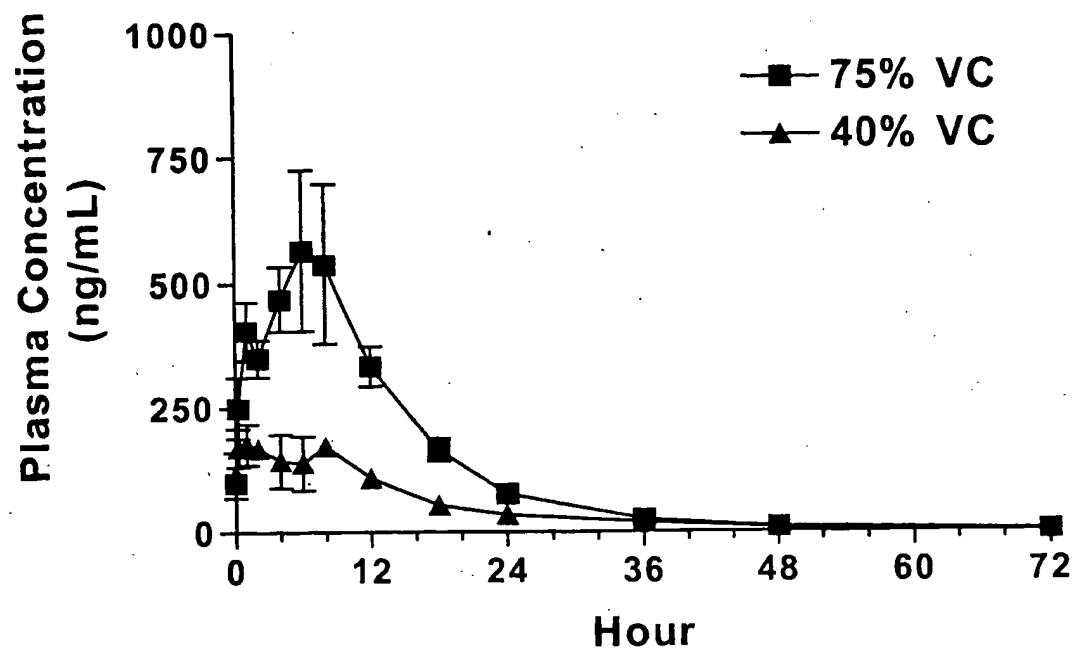


Fig. 3

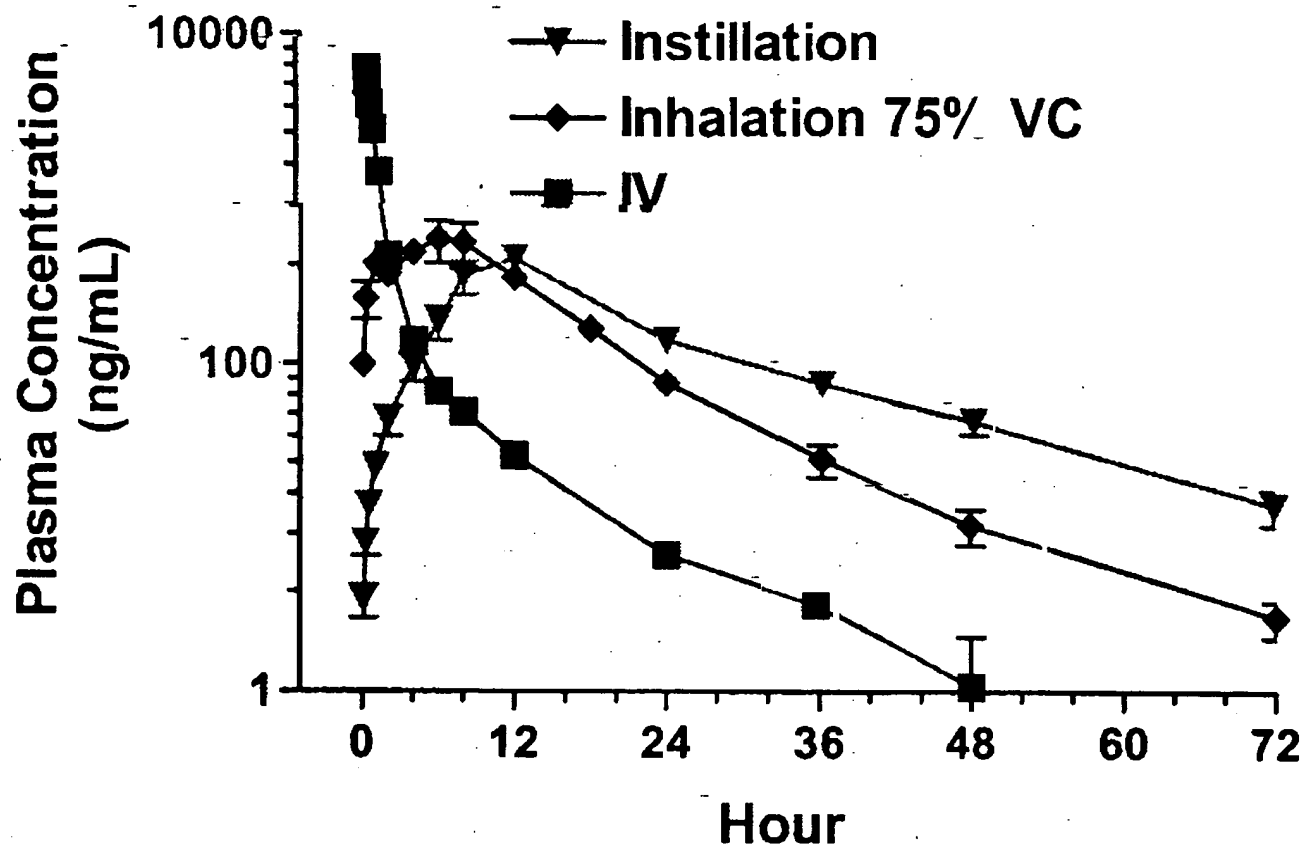


Fig. 4

pelB Leader

71

ATGA AATACCTATT GCCTACGGCA GCCGCTGGAT
TACT TTATGGATAA CGGATGCCGT CGGCGACCTA

pelB Leader

5A Heavy Chain

SfiI

NcoI

PstI

141 TGTTATTACT CGCGGCCAG CGGCCCATGG CCCAGGTACA GCTGCAGCAA TCAGGGGGAG GCGTGGTCCA
ACAATAATGA GCGCCGGGTC GGCCGGTACC GGTCCATGT CGACGTCGTT AGTCCCCCTC CGCACCCAGGT

5A Heavy Chain

211 GCCTGGGAGG TCCCTGAGAC TCTCCTGTGC AGCCTCTGGA TTCACCTTCA GTAGCTATGC TATGCACTGG
CGGACCCCTCC AGGACTCTG AGAGGACACG TCGGAGACCT AAGTGAAGT CATCGATACG ATACGTGACC

5A Heavy Chain

BsaI

281 GTCCGCCAGG CTCCAGGGAA GGGCTGGAG TGGTCTCAG CTATTAGTGG TAGTGGTGGT AGCACATACT
CAGGCGGTCC GAGGTCCCTT CCCCAGCCTC ACCCAGAGTC GATAATCACC ATCACCACCA TCGTGTATGA

5A Heavy Chain

351 ACGCAGACTC CGTGAAGGC CGGTTACCA TCTCCAGAGA CAACGCCAAG AACTCACTGT ATCTGCAAAT
TGCGTCTGAG GCACTTCCC GCCAAGTGGT AGAGGTCTCT GTTGCGGTTT TTGAGTGACA TAGACGTTTA

Fig. 5A

421	GAACAGCCTG AGAGCCGAGG ACACGGCTGT GTATTACTGT GCGAGAGATA CCGAGGGTA CTTCGATCTC CTTGTCGGAC TCTCGGCTCC TGTGCCGACA CATAATGACA CGCTCTCTAT GGGCTCCCAT GAAGCTAGAG	5A Heavy Chain	Linker	5A Light Chain
491	TGGGGCCCGTG GCACCCCTGGT CACCGTCTCC TCAGGTGGCG GAGGGTCATC TGAGCTGACT CAGGACCCCTG ACCCGGGCAC CGTGGGACCA GTGGCAGAGG AGTCCACCGC CTCCCACTAG ACTCGACTGA GTCCCTGGGAC			
561	CTATGTCTGT GGCCTTGGGA CAGACAGTCA GAATCACATG TCAAGGGGAC AGTCTCAGAA AGTATCATGTC GATACAGACA CCGGAACCCCT GTCTGTCACT CTTAGTGTAC AGTTCCCTCTG TCAGAGTCTT TCATAGTACG			
631	AAGCTGGTAT CAGCAGAAGC CAGGGCAGGC CCCTGTTCTT GTCATCTATG GTAAGAAATGA ACGTCCCTCA TTCGACCATA GTCGTCTTCG GTCCCGTCCG GGGACAAGAA CAGTAGATAC CATTCTTACT TGCAGGGAGT			
701	GGGATCCCGAG AGCGATTCTC TGGGTCCACC TCAGGAGACA CAGCTTCCTT GACCATCAGT GGGCTCCAGG CCCTAGGGTC TCGCTAAGAG ACCCAGGTGG AGTCCTCTGT GTCGAAGGAA CTGGTAGTCA CCCGAGGTCC			
771	CGGAAGATGA GGCTGACTAT TACTGTCACT CCCGAGACTC TAATGCTGAT CTTGTGGTGT TCGGCGGAGG GCCCTTCTACT CCGACTGATA ATGACAGTGA GGGCTCTGAG ATTACGACTA GAACACCACA AGCCGCCTCC			

Fig. 5B

5A Light Chain

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      BlnI
      ~~~~~
      HindII
      ~~~~~
      Sali
      ~~~~~
      AvrII
      ~~~~~
841  GACCAAGGTC ACCGTCCTAG GTTAATAAGT CGACCTCGAC
      CTGGTTCCAG TGGCAGGATC CAATTATTCA GCTGGAGCTG
  
```

Fig. 5C

pelB Leader

 ATGAA ATACCTATTG CCTACGGCAG CCGCTGGATT
 TACTT TATGGATAAC GGATGCCGTC GCGGACCTAA

5A Heavy Chain

pelB Leader

SfiI

PstI

NcoI

71 GTTATTACTC GCGGCCCAGC CGGCCATGGC CCAGGTACAG CTGCAGCAAT CAGGGGGAGG CGTGGTCCAG
 CAATAATGAG CGCCGGGTCTG GCCGGTACCG GGTCCATGTC GACGTCGTTA GTCCCCCTCC GCACCAAGTC

5A Heavy Chain

BsgI

141 CCTGGGAGGT CCTGAGACT CTCCTGTGCA GCCTCTGGAT TCACCTTCAG TAGCTATGCT ATGCACTGGG
 GGACCCCTCCA GGGACTCTGA GAGGACACGT CGGAGACCCTA AGTGGAAAGTC ATCGATACGA TACGTGACCC

5A Heavy Chain

211 TCCGCCAGGC TCCAGGGAAG GGGCTGGAGT GGGTCTCAGC TATTAGTGGT AGTGGTGGTA GCACATACTA
 AGGCGGTCCG AGGTCCCTTC CCCGACCTCA CCCAGAGTCG ATAATCACCA TCACCACCAT CGTGTATGAT

5A Heavy Chain

281 CGCAGACTCC GTGAAGGGCC GGTTCACCAT CTCAGAGAGC AACGCCAAGA ACTCACTGTA TCTGCAAAATG
 GCGTCTGAGG CACTTCCCGG CCAAGTGGTA GAGGTCTCTG TTGCGGTTCT TGAGTGACAT AGACGTTTAC

Fig. 6A

	5A Heavy Chain	Linker	5A Light Chain
351	AACAGCCTGA GAGCCGAGGA CACGGCTGTG TATTACTGTG CGAGAGATAC CCGAGGGTAC TTCGATCTCT TTGTCGGACT CTCGGCTCCT GTGCCGACAC ATAATGACAC GCTCTCTATG GGCTCCCATG AAGCTAGAGA		
421	GGGGCCGTGG CACCCTGGTC ACCGTCTCCT CAGGTGGCGG AGGTCATCT GAGCTGACTC AGGACCCCTGC CCCCGGCACC GTGGGACCAG TGGCAGAGGA GTCCACCGCC TCCCAGTAGA CTCGACTGAG TCCTGGGACG		
491	TATGTCTGTG GCCTTGGGAC AGACAGTCAG AATCACATGT CAAGGGGACA GTCTCAGAAA GTATCATGCA ATACAGACAC CGGAACCCCTG TCTGTCACTC TTAGTGTA CA GTTCCCCCTGT CAGAGTCTTT CATAGTACGT		
561	AGCTGGTATC AGCAGAAGCC AGGGCAGGCC CCTGTTCTTG TCATCTATGG TAAGAATGAA CGTCCCCTCAG TCGACCATAG TCGTCTTCGG TCCCGTCCGG GGACAAGAAC AGTAGATACC ATTCTTACTT GCAGGGAGTC		
631	GGATCCCAGA GCGATTCTCT GGGTCCACCT CAGGAGACAC AGCTTCCTTG ACCATCAGTG GGCTCCAGGC CCTAGGGTCT CGCTAAGAGA CCCAGGTGGA GTCCTCTGTG TCGAAGGAAC TGGTAGTCAC CCGAGGTCCG		

BamHI

Fig. 6B

5A Light Chain

701 GGAAGATGAG GCTGACTATT ACTGTCACTC CCGAGACTCT AATGCTGATC TTGTGGTGTGTT CGGCGGAGGG
CCTTCTACTC CGACTGATAA TGACAGTGAG GGCTCTGAGA TTACGACTAG AACACCACAA GCCGCCTCCC

5A Light Chain (G3S)2 Linker IL2 Coding Region

BlnI
~~~~~  
AvrII  
~~~~~

771 ACCAAGTCA CCGTCCTAGG TGGCGGCGGA AGCGGCGGAG GCTCCGCACC TACTTCAAGT TCTACAAAGA
TGGTTCCAGT GGCAGGATCC ACCGCCGCCT TCGCCGCCTC CGAGGCGTGG ATGAAGTTCA AGATGTTTCT

IL2 Coding Region

841 AACACAGCT ACAACTGGAG CATTACTTC TGGATTACA GATGATTTTG AATGGAATTA ATAAATTACAA
TTTGTGTCGA TGTGACCTC GTAAATGAAG ACCTAAATGT CTACTAAAAC TTACCTTAAT TATTAATGTT

IL2 Coding Region

911 GAATCCCAA CTCACCAGGA TGCTCACATT TAAGTTTAC ATGCCCAAGA AGGCCACAGA ACTGAAACAT
CTTAGGGTTT GAGTGGTCCT ACGAGTGTA ATTCAAAATG TACGGGTTCT TCCGGTGTCT TGACTTTGTA

IL2 Coding Region

XbaI
~~~~~

981 CTTCAGTGC TAGAAGAAGA ACTCAAACCT CTGGAGGAAG TGCTAAATTT AGCTCAAAGC AAAAACCTTC  
GAAGTCACAG ATCTTCTTCT TGAGTTTGA GACCTCCTTC ACGATTAAA TCGAGTTTCG TTTTGTGAAAG

Fig. 6C

IL2 Coding Region

BfrI

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AflII

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1051 ACTTAAGACC CAGGGACTTA ATCAGCAATA TCAACGTAAT AGTTCTGGAA CTAAAGGGAT CTGAAACAAC  
TGAATTCTGG GTCCCTGAAT TAGTCGTTAT AGTTGCATTA TCAAGACCTT GATTCCCTA GACTTTGTTG

IL2 Coding Region

1121 ATTCATGTGT GAATATGCTG ATGAGACAGC AACCATTTGA GAATTTCTGA ACAGATGGAT TACCTTTTGT  
TAAGTACACA CTTATACGAC TACTCTGTCG TTGGTAACAT CTTAAAGACT TGTCTACCTA ATGGAACAACA

IL2 Coding Region

EcoRI

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XhoI

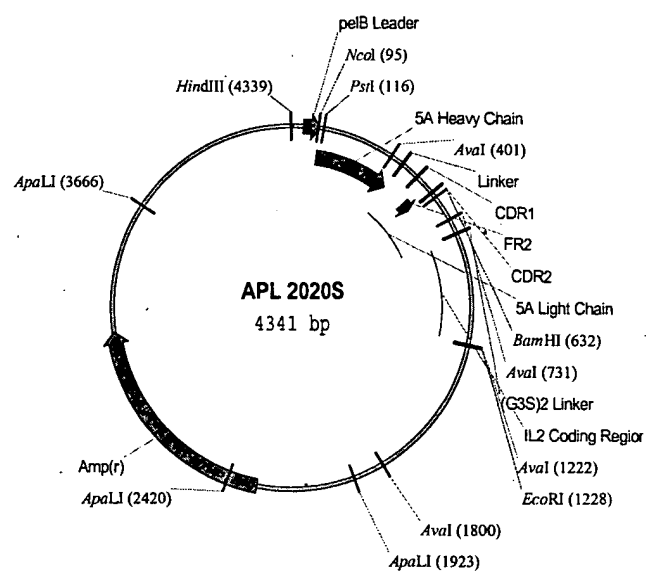
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PaeR7I

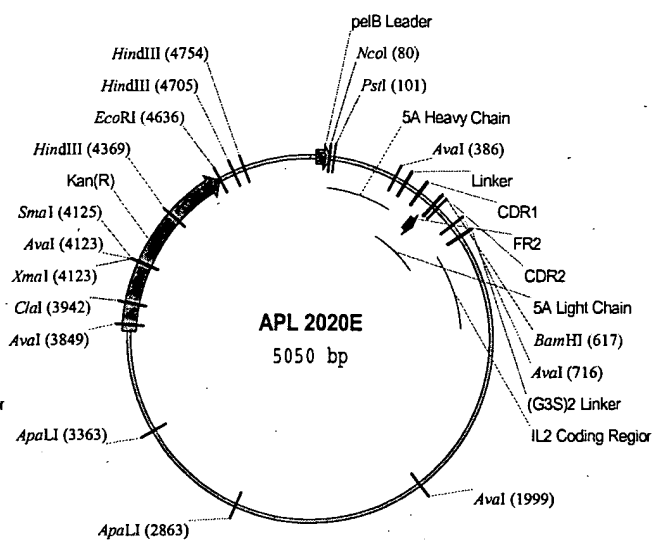
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1191 CAAAGCATCA TCTCAACACT AACTTAATAA CTCGAGGAAT TC
GTTTCGTAAGT AGAGTTGTGA TTGAATTATT GAGCTCCTTA AG

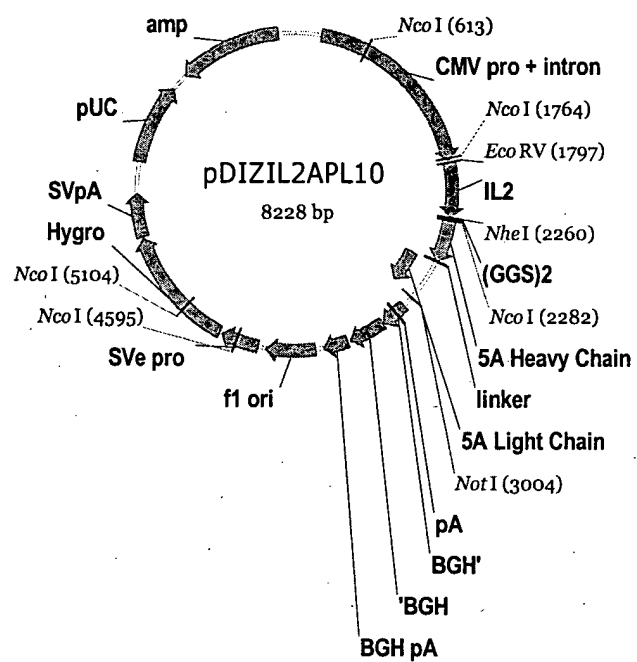
Fig. 6D



pSyn sFv-IL-2 Fusion Construct

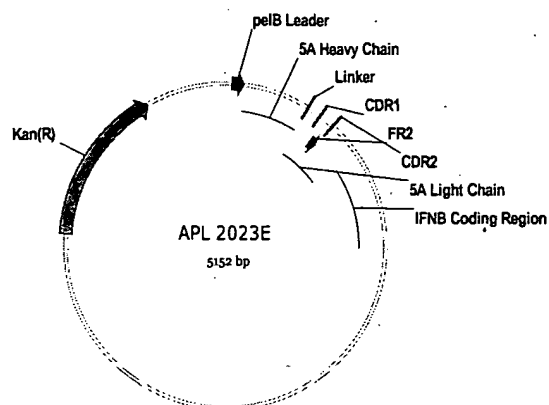


pELK sFv-IL-2 Fusion Construct

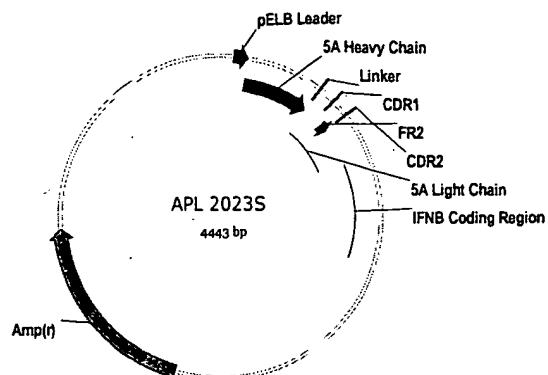


pDIZ sFv-IL-2 Fusion Construct

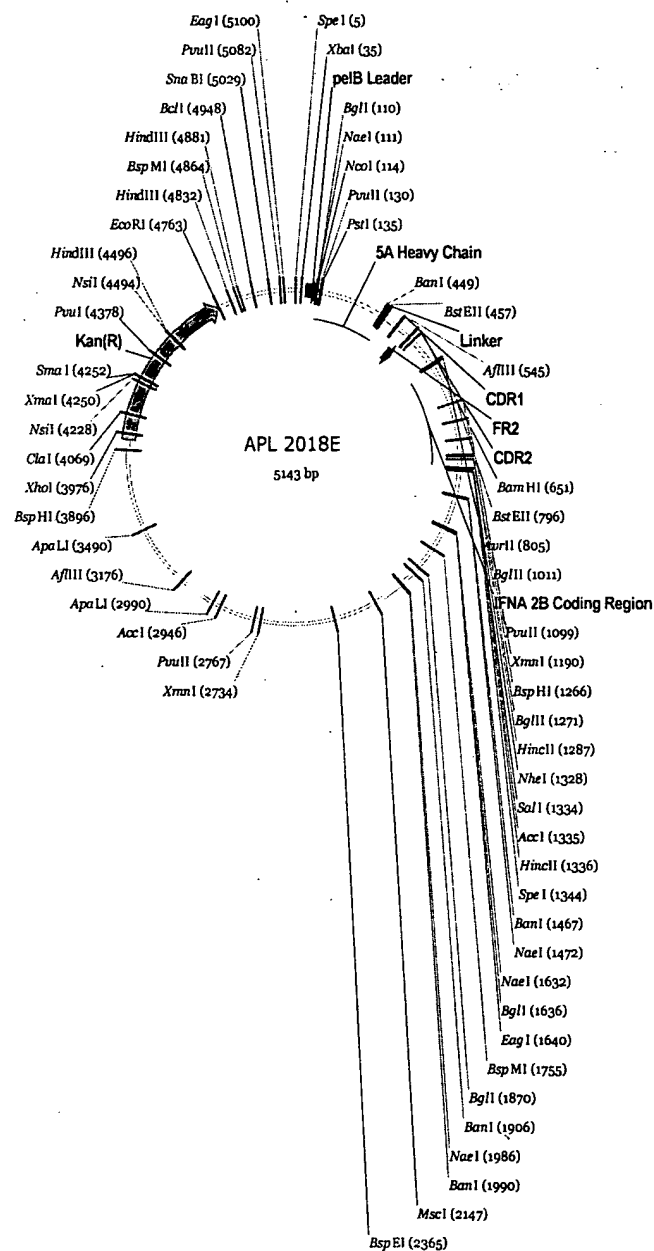
Fig. 7



pELK sFv-β-IFN Fusion Construct



pSyn sFv-β-IFN Fusion Construct



pELK sFv-α-IFN Fusion Construct

Fig. 8